

APPLICANT(S): RISKIN, Yefim
SERIAL NO.: 10/510,099
FILED: October 5, 2004
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AMENDMENTS TO THE DRAWINGS

The attached sheets of drawings includes changes to Figs. 1-3. These sheets, which include Fig. 1-3, replace the original sheets including the same figures. In the corrected sheets, line quality is improved.

Attachment: Replacement Sheets

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REMARKS

The present response is intended to be fully responsive to all points of objection and/or rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

Applicants assert that the present invention is new, non-obvious and useful. Prompt consideration and allowance of the claims is respectfully requested.

Status of Claims

Claims 1-27 are pending in the application.

Claims 1-8 and 10-14 have been rejected.

Claim 9 has been objected to.

Claims 1-14 have been canceled without prejudice or disclaimer. In making this cancellation without prejudice, Applicant reserves all rights in these claims to file divisional and/or continuation patent applications.

New claims 15-27 have been added. Applicant respectfully asserts that no new matter has been added.

Allowable Subject Matter

In the Office Action, the Examiner stated that claim 9 was objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant is grateful for the indication of allowability by the Examiner, but declines at this time to amend the claim as indicated.

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Remarks to the Drawings

Substitute Figs. 1-3 have been submitted to improve line quality of the figures in response to the Examiner's objection indicated on the cover sheet of the Office action.

Claim Objections

In the Office Action, the Examiner objected to claims 1-14 because of alleged informalities. Insofar as these claims have been cancelled, the Examiner's objection is moot.

CLAIM REJECTIONS

35 U.S.C. § 112 Rejections

In the Office Action, the Examiner rejected claims 13 and 14 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Insofar as these claims have been cancelled, the Examiner's objection is moot.

35 U.S.C. § 103 Rejections

In the Office Action, the Examiner rejected claims 1 and 7 under 35 U.S.C. § 103(a), as being unpatentable over Pitel et al. (US Patent No. 6,259,591) in view of Gefter et al. (US Patent No. 6,850,403). Although these claims have been cancelled, and the rejection is moot, Applicant wishes to remark on the patentability of pending claims 15-27.

Applicant respectfully disagrees with the Examiner's comments that Pitel discloses, *inter alia*, an element for producing a potential drop (see Pitel Fig. 2, elements 106a and 106b). In fact, Pitel states the following regarding the purpose of elements 106a and 106 b:

Capacitors 106a and 106b connected in parallel with resistors 105a and 105b to filter out fluctuations of the ion current signal at the operating frequency and its harmonics

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and produce a DC component signal proportional to the DC component of ion current. The voltage drops across resistors 105a and 105b could be measured by a DC voltmeter or a similar instrument.

(Pitel, col 8, lines 26-42). The voltage drop across these components is in the range of 1 to 10 V, since they are connected to the inputs of operational amplifiers in unit 113 (Pitel, Fig. 3). These are the operating voltages of the electronic circuit components mounted inside the generator that are not connected with any structural components outside the generator.

Elements 106a and 106b in the Pitel reference do not form a circuit common to the ion currents of both electrodes. Currents from electrodes 47 and 49 (Pitel, Fig. 2) flow separately through their respective capacitors, and the common connection point of the capacitors 106a and 106b is connected to the ground with wire 115 (Pitel, Fig. 2) with no feedback.

The Pitel reference, therefore, does not deal with the use of currents of corona electrodes or any other currents for stabilization or balancing of ion fluxes or for providing high potential across the cages. In Pitel, the cages are not mentioned and the currents of the corona electrodes are used only for measurement and generation of "Cleaning" signal.

Contrary to Pitel, in the present invention, the cage currents are subjected to high potentials across the cages so as to generate external electric fields. Currents supplied from one AC high voltage source to corona electrodes are passed through an element automatically balancing these currents (capacitor) before flowing through the rectifying diodes.

With regards to the Examiner's analysis of Gefter, et al., Applicant respectfully notes the following with respect to the external electric fields.

Gefter et al. demonstrate the use of only one screen (element 12 in Fig. 1) on the outside of the generator, with a certain low potential (several volts as explicitly stated by the Examiner on page 5 of the action). Screen 12 together with electrodes 7 and 8 and screens 9 and 10 (Gefter, Fig. 1) form electric fields inside the ion generator and are aimed at keeping a balance of positive and negative ion fluxes.

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Moreover, screens 12, 9 and 10 are not designated to remove ions outside the generator proximity since in the Gefter reference, this function is performed by ventilator 1 (Fig. 1).

The use of corona discharge current flowing between the corona electrodes and the screen in order to stabilize the outgoing ions flux in Gefter is a known technical solution and widely used in electronics in order to convert a voltage source to current stabilizer by collecting the feedback signal from the resistor connected in the load circuit and using this signal to control the source. This technical solution was used in ion generators known in the art.

In the present invention the external electric fields are generated when voltages providing for difference of potentials (100 – 500 V) are applied across two conducting cages outside the generator. These fields are designated to take the ions from the generator proximity to the outer space. These fields are not related to the balancing of the positive and negative ion fluxes since in the present invention this function is automatically fulfilled by the balancing unit (capacitor in the general circuit of ion currents).

In the method of the present invention, the corona discharge current flowing from the corona electrodes to the cages has two functions. The first function is to generate high potential (100- 500 V) across the cage. In order to do so, the current is first passed through a high resistance component (for example, Zener diode 5 and 5a in Fig. 1), which provides for a voltage drop across the cage that does not depend on the current. The second function is to generate a feedback signal in order to control the AC high voltage generator. To do so the same current is passed through the current-collecting resistance. Therefore, Gefter does not disclose the relevant portions of the claims of the present invention.

In view of the foregoing amendments and remarks, the pending claims are deemed to be allowable. Their favorable reconsideration and allowance is respectfully requested.

Should the Examiner have any question or comment as to the form, content or entry of this Amendment, the Examiner is requested to contact the undersigned at the telephone number below. Similarly, if there are any further issues yet to be resolved to advance the

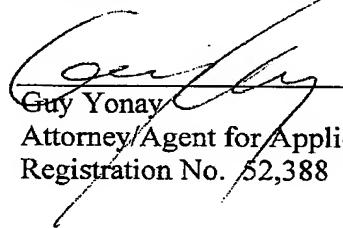
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prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

Please charge any fees associated with this paper to deposit account No. 50-3355.

Respectfully submitted,



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Dated: February 7, 2006

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